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# Shipping in the Baltic

BY GUNNAR ALEXANDERSSON

*Shipping in the Baltic is not as important as it was during the days of the Vikings or the Hanseatic League, but the tonnage accounted for by shipping has increased greatly since the mid-19th century. On an average day, about 700 ships plus an equal number of fishing vessels are at sea in the Baltic. The author concludes that international agreements to control pollution from shipping should be easier to enforce as vessels become larger, fewer and technically more sophisticated, but he warns about the continuing problem of pollution from legions of small pleasure craft.*

Shipping in the Baltic holds a less prominent position in world trade today than it did in the days of the Vikings or the Hanseatic League, or when the Dutch and the British ruled the waves and their navies and merchant marines were supplied with hemp, flax, naval stores, bar iron and guns from the Baltic lands. The Industrial Revolution led to a rapid increase in tonnage shipped over the Baltic, with wood products, Russian grain (4) and Swedish iron ore going out and British coal coming in. It also meant a decline in relative importance for the Baltic Sea, as the raw materials of the transoceanic countries became accessible to the industrial core of northwestern Europe through the revolution in transports. Technical changes in sea transport were rapid in the hundred years before 1950, but they have followed an even steeper curve since.

## STRUCTURAL CHANGES

The volume in tons and the work in ton-kilometers accounted for by shipping have increased greatly since the mid-19th century. Ships have increased in size and speed, and have become more specialized, but they have been declining in number. These general trends in world shipping are difficult to quantify for the Baltic Sea. An indication: the tonnage of the Swedish merchant marine, primarily engaged in deep-sea cross-trading, was seven times larger in 1975 than at the turn of the century but it engaged only one-fifth as many vessels. The number of vessels (excluding ferries) in domestic and foreign traffic calling at Swedish ports reached a maximum in the late 1930s. The 437 000 vessels entered and cleared in Swedish ports in 1975 were somewhat fewer than in 1939, but no less than



The Neptune Shipyards in Rostock, German Democratic Republic (GDR).  
Photo: Pressens Bild.

237 000 were accounted for by six ferry ports in the southernmost province of Skåne: Helsingborg, Malmö, Limhamn, Landskrona, Trelleborg and Ystad.

Shipping through the Baltic Straits is better documented than similar traffic elsewhere in the world because of the Sound Dues collected by Denmark between 1429 and 1857 (Figure 1). Most traffic by far moved the shortest way from the North Sea to the Baltic through the Öresund, where dues were collected at Kronborg Castle near Helsingør. This was

initially a ship duty, but later a load tariff was added and the ships then had to be checked for their cargo.

In English the generic word Sound is used for this waterway, an indication of its importance in former centuries (the Romans had a similar word for the Strait of Messina). However, the Sound is very shallow south of a line from Copenhagen to Malmö and as the size of ships has increased the Great Belt has become the leading passage for through traffic. The narrow and winding Little Belt has a



Figure 1. Old map showing the narrow straight separating Helsingør (Denmark) with Helsingborg (Sweden). Kronborg Castle can be seen in the center. Between 1429 and 1857 the Danes collected sound Dues from all ships passing through the Sound.

threshold depth of 13 m. However, currents are strong and a bridge completed in 1935 limits traffic to vessels with less than 33 m clearance. The 17 meters transit-route from Skagen to Gedser, NE through the Great Belt established by the Danish Government, Route T, has its depth restriction between Darss in the GDR and Falster in Denmark, the *Darsser Schwelle* (the Darss Threshold) through which leads the Kadet Channel. The Inter-Governmental Maritime Consultative Organization (IMCO) has issued recommendations on navigation for vessels over 40 000 dwt or a draught of 13 m or more. Traffic is separated at Sprogø and in the Kadet Channel (6).

The approaches to the Baltic—the Straits and the Kiel Canal—are now open to shipping without dues, but because of the strategic importance of the area traffic is closely watched by radar stations of NATO, the Warsaw Pact and neutral Sweden. In a way, we are back to the ship-counting instituted by King Erik of Pomerania in 1429, but we have no breakdown of cargo categories. Permanent patrol vessels are kept by the WP countries south of Falsterbo, off Møns

Klint and near the Fehmarn Belt. Seasonal or temporary patrol vessels check traffic at the Skaw and at the Baltic end of the Kiel Canal.

On an average day 150 commercial vessels enter or leave the Baltic through the Straits and the Kiel Canal. About one-third fly a Comecon flag. Around 700

ships plus as many fishing vessels are at sea in the Baltic on an average day. Over 100 ships per day pass on either side of Gotland (Figure 2). Some 95 vessels per day enter the Sound from the north and 80 from the south. The Kiel Canal clears 150 vessels a day, the Great Belt 55 and the Little Belt 25. The 100 km-long Kiel

Figure 2. Cars prepare to board the ferry at Nynäshamn (Sweden) bound for the island of Gotland. Photo: Tiofoto/Björn Nordien.





Figure 3. The Finnjet leaving Helsinki harbor. Photo: Tiofoto/Nils-Johan Norenllind.

Canal, originally built for strategic purposes accommodates vessels of 10 000 grt and 8 m draught, shortening the distance between the Baltic and the English Channel by 300 nautical miles. Some 50 million tons of cargo pass through the Kiel Canal and an estimated 125–150 million tons through the straits (6).

Shipping services in the Baltic have become automated. All Swedish lighthouses will soon be controlled from a room at the National Board of Shipping and Navigation at Norrköping and will no longer be manned. The number of pilot stations is decreasing continuously. From the manned stations, pilots move by car or by fast pilot boats to other ports for pilotage. They are no longer called by flag but by radio.

The postwar transport revolution has radically changed passenger and cargo flows in the Baltic region. Passengers and general cargo increasingly move by air or by ferry. Intermodal competition has led to a decline for liner shipping on short and medium hauls (national and intra-European trades), a strong expansion for private cars and trucks and a stagnation for railroads in Western Europe. However, railroads in the centrally planned economies retain a strong position because road traffic there is less developed (7).

#### FERRY TRAFFIC

The tremendous increase in ferry traffic, with a strong focus on the short coastline of the Federal Republic of Germany, is in response to the dominant role of road traffic in Western Europe. Ferries act as bridges connecting the road system of the FRG with that of the Scandinavian peninsula. The largest concentrations of ferry terminals are at Lübeck-Travemünde and Kiel. Helsingborg-Helsingør and Rødby-Puttgarden, connecting

the Scandinavian railroad network with that of Western Europe, have frequent ferry service. The ports of the GDR and Poland are less frequented by Nordic trucks and cars because of the generally poorer roads and more cumbersome border control in these countries.

Ferries are not limited to short water passages with frequent service. Helsinki, Göteborg and Oslo have ferries to the Lübeck-Kiel area. The large ferry *Finnjet*, powered by gas turbines, has reduced the travelling time between Helsinki (Helsingfors) and Lübeck to 22 hours (Figure 3). The principles applied to ferries are rapidly being introduced in deep sea liners, even on the longest hauls. Roll-on-roll-off (roro) ships are being used for the second generation of container vessels.

The USSR and Poland have made heavy investments in dry cargo tonnage (5). The maritime economy has received high priority in both countries (11). The USSR has the largest number of dry cargo vessels in the world; the roro-type is common among new ships and ships on order. Soviet trade in general cargo with distant countries is limited; the ships are meant for cross trading. The Soviet and Polish flags are becoming common in the general cargo ports of the world. In the USSR, the Baltic ports compete with those of the Black Sea for the general cargo trade but the Baltic ports as a rule are more favorably located for trade with Western Europe (see Figure 4).

#### BULK TRADES

Bulk shipments in the Baltic are primarily coal from Poland, oil from the USSR, and iron ore from Sweden. The Polish coal shipments increased from 8 million tons (mt) in 1960 to 16 mt in 1970 and 24 mt in 1976, when they accounted for three-fourths of Poland's seaborne exports (2). Large new coal-fields are being opened

closer to the Baltic. Most of the trade with the other Comecon countries, eg oil, natural gas and iron ore from the USSR, moves across Poland's land borders. The Polish population and manufacturing industry is concentrated far inland in an equilateral triangle with its base in the south and its apex at Warsaw. The port cities are attracting heavy industry and creating new trade flows, but still only a little more than 40 percent of Poland's foreign trade by tonnage is seaborne. Important bulk flows received through the ports are grain, iron ore, phosphates and apatite, and oil, each with quantities between two and six million tons. The new oil refinery at Gdańsk is served by six 150 000 ton tankers that bring crude from the Gulf. They are the largest ships that enter the Baltic, the largest that can pass the threshold at Darss. Gdynia is building the largest container terminal in Poland.

The seaborne Soviet oil exports are shipped primarily via terminals in the Black Sea. In the Baltic, Ventspils in Latvia dominates with 18 mt. It has a branch line to the large "Friendship Pipeline" that carries Soviet oil into Poland and East Germany. Sizeable quantities (7 mt) also move through Klaipėda in Lithuania. For other Soviet ports, dry cargo is most important. Leningrad is a large general cargo port, as well as the second-largest metropolitan region and the leading machine manufacturing center in the country. Among new developments is the "land-bridge" for containers to the Far East by way of the Transsiberian Railway. Some containers from the West are first shipped by sea, through Leningrad, others by rail directly to Moscow. An improvement of the north-south highway through the Baltic republics, serving Finland's truck trade with the countries of Central Europe, is included in the present Five-Year Plan. It is connected with the Helsinki-Tallinn ferry line.

Riga, less remote than Leningrad from Moscow and other major industrial regions of the USSR(4), is rapidly becoming an alternative port for general cargo, including containers.

Traditionally, sparsely populated Sweden and Finland have had many small ports shipping forest products (1). Numerous sawmills and pulp and paper mills, located at river mouths, received their logs floated down river and had their export products picked up at the factory quay by deep-sea liners (3). This mill-to-mill hopping by transoceanic vessels was never popular among the shipowners, who preferred to load in one or a few ports in each country. With larger liner tonnage some concentration has occurred, but by international standards these two countries with their long coastlines still have many ports.

Sweden exports large amounts of iron ore, but most of it moves through the Nor-

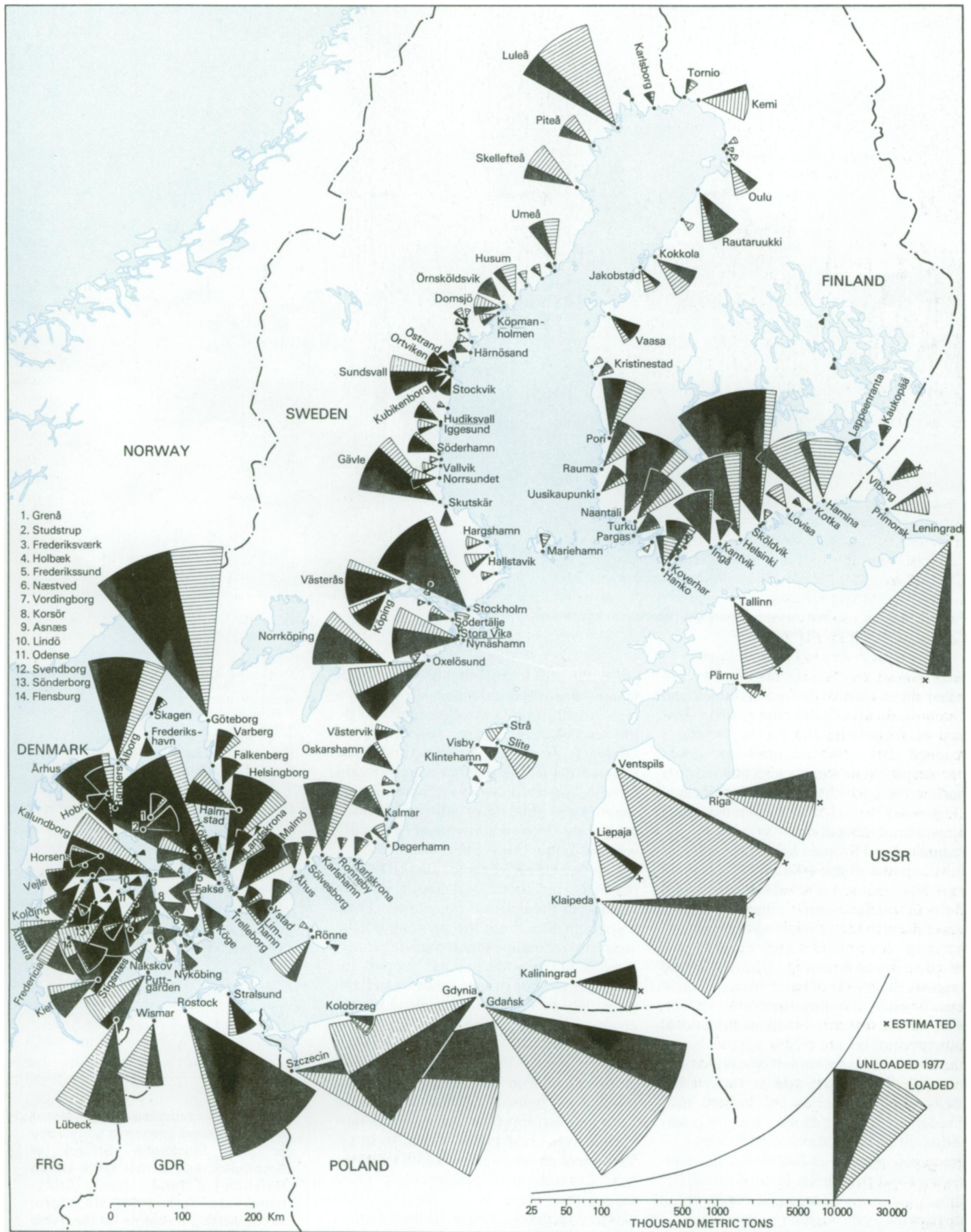


Figure 4. The port map is based on data contained in References 5, 8, 9, and 10.



Figure 5. A cargo vessel maneuvers through the Stockholm archipelago near Vaxholm.  
Photo: Tiofoto/Nils-Johan Noren lind.

wegian port of Narvik; on the Swedish coast there are two ore ports, Luleå and Oxelösund. Stockholm, the leading general cargo port on the east coast and a leading market for oil products, poses special problems with its long and winding harbor entrance through the archipelago (Figure 5). Turku (Åbo), in Finland, has a similar kind of location.

Finland and Sweden have three refinery ports on the Baltic—Sköldvik, Naantali and Nynäshamn—and additional oil depots in medium-sized cities along the coast. The Baltic refineries are owned by national oil companies and receive much of their crude from the USSR (Finland imports two-thirds of its oil from its neighbor; Sweden also buys much Soviet oil). The Nordic refineries of the multinational oil corporations are on the approaches to the Baltic: in southern Norway, on the Swedish west coast and at the Danish Belts. Such refineries are located near Fredericia, Kalundborg and Korsør. Adjacent power stations use the heavy oil fractions and coal as fuel. From these refineries and from units located elsewhere in northwestern Europe, oil products are distributed throughout the Nordic countries via the company depots (see Figure 4).

#### SHIPPING AND POLLUTION CONTROL

International agreements on the restriction of pollution from ships should be easier to enforce when vessels become larger, fewer and technically more so-

phisticated. For Poland and the Soviet Union, where Baltic seaborne trade has a high growth rate, control is simplified by the exceptionally large percentage of foreign trade moved by ships under the national flags. The gradual concentration of seaborne traffic to fewer ports should simplify the building of port installations needed by ships to allow them to comply with the Baltic Convention.

For the USSR, Poland, the GDR and the FRG, the Baltic coastline is short in relation to the national population. From Vyborg to Flensburg the pressure on the coast for recreational activities is strong. This should provide popular support for measures to keep the sea clean, even if the price tag is high. But recreation also creates its own shipping problems. Sailing and motorboating have long been popular in Baltic waters. Pleasure boats were previously limited to the coastal people and to relatively few city families of wealth or keen interest, but boat ownership is now rapidly spreading to the public at large. This phenomenon is not covered by statistics. Coastal municipalities build guest harbors for these boats, provided with sanitary facilities. To get all boat owners to accept the spirit of the Baltic Convention will require large educational efforts by boat clubs and other organizations.

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